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Empirical estimation of d-risks at distinguishing one-sided hypotheses

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Abstract

© 2016, Pleiades Publishing, Ltd.This paper deals with problem of distinguishing between the two hypotheses H0: $\theta \leq 0$, H1: $\theta > 0$ based on a fixed volume sample with a normal distribution $N(\theta, 1)$, $\theta \in R$. It is considered by suppose that the true value θ is a realization of a random value ϑ with some unknown a priori density $g(\theta)$. An empirical estimate $g(\theta)$ based on the estimate of archive data of prior distribution characteristic function is suggested for the d-risk of the optimal criteria (conditional probability of justice of hypothesis Hj in condition that it is rejected, $j = 0, 1$). Consistency of empirical estimators of d-risks and appropriate critical values are studied. The rate of convergence is discovered from obtained estimates.

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Keywords

d-posteriori approach, deconvolution, guaranteed inference